

## ABSTRACT

It is an object of this invention to provide a high-frequency amplifier which can efficiently amplify an input signal in a plurality of different frequency bands in a simple configuration. The high-frequency amplifier is configured such that an RF signal having  $n$  frequencies ( $f_1 > f_2, \dots, > f_n$ ) applied to the amplifier is converted by an impedance conversion circuit to a higher impedance than the output impedance of the amplifier, and is branched into the highest frequency  $f_1$  and lower frequencies lower than that by a high-pass filter 5 and a low-pass filter. Frequency  $f_1$  passes high-pass filter 31, and is thereby converted to 50 ohms. The frequencies lower than frequency  $f_1$  filtered by the low-pass filter are converted to a high impedance by an impedance conversion circuit, and are branched into the second highest frequency  $f_2$  and lower frequencies by high-pass filter 32 and low-pass filter 42. In the same manner, 10 impedance conversion circuits are added, while the signals are branched up to  $f_n$ , to match the impedance to 50 ohms for each of the frequencies. 15